In the claims:

1. (currently amended) An isolated solid tumor stem cell, wherein:

(a) the solid tumor stem cell is isolated ~~derived~~ from a solid tumor of epithelial origin, wherein said isolated solid tumor stem cell is at least 75% free from other cells of said solid tumor that fail the requirements of (b), (c), (d), and (e), below; and

(b) the solid tumor stem cell is tumorigenic; ~~and~~

(c) the solid tumor stem cell expresses CD44;~~at least one marker selected from the group consisting of B38.1, CD44 and epithelial specific antigen (ESA).~~

(d) the solid tumor stem cell does not express detectable levels of one or more LINEAGE markers, wherein a LINEAGE marker is selected from the group consisting of CD2, CD3, CD10, CD14, CD16, CD31, CD45, CD64, and CD140b; and

(e) the solid tumor stem cell expresses lower levels of the marker CD24 than the mean expression of CD24 by non-tumorigenic cancer cells derived from the solid tumor.

2. (canceled)

3. (canceled)

4. (currently amended) The isolated solid tumor stem cell of claim 1 ~~3~~, wherein the solid tumor stem cell does not express detectable levels of LINEAGE markers, wherein the LINEAGE markers comprise CD2, CD3, CD14, CD16, and CD64.

5. (canceled)

6. (original) The isolated solid tumor stem cell of claim 4, wherein the LINEAGE markers further comprise CD10, CD31, and CD140b.

7. (previously presented) The isolated solid tumor stem cell of claim 1, wherein the solid tumor is a sarcoma or an epithelial cancer.

8. (previously presented) The isolated solid tumor stem cell of claim 7, wherein the epithelial cancer is a breast cancer or an ovarian cancer.

9. (original) The isolated solid tumor stem cell of claim 1, wherein the solid tumor stem cell contains a polynucleotide vector.

10. (original) The isolated solid tumor stem cell of claim 9, wherein the polynucleotide vector is a viral vector or a plasmid.

11. (original) The isolated solid tumor stem cell of claim 9, wherein the polynucleotide vector contains a reporter polynucleotide.

12. (previously presented) The isolated solid tumor stem cell of claim 11, wherein the reporter polynucleotide provides a detectable signal when active in a solid tumor stem cell.

13. (original) The isolated solid tumor stem cell of claim 1, wherein the solid tumor stem cell further comprises a recombinant polynucleotide.

14. (original) The isolated solid tumor stem cell of claim 13, wherein the recombinant polynucleotide is integrated into a chromosome of the solid tumor cell.

15.-17. (canceled)

18. (previously presented) The isolated solid tumor stem cell of claim 1, wherein the solid tumor stem cell is situated in a culture medium.

19. (original) The isolated solid tumor stem cell of claim 18, wherein the culture medium comprises a Notch ligand.

20. (original) The isolated solid tumor stem cell of claim 1, wherein the solid tumor stem cell is affixed to a substrate.

21. (original) The isolated solid tumor stem cell of claim 1, wherein the solid tumor stem cell has been treated to reduce proliferation.

22. (original) The isolated solid tumor stem cell of claim 1, wherein the solid tumor stem cell has been treated to increase proliferation.

23. (presently presented) An enriched population of solid tumor stem cells, wherein:

(a) the tumor cells are derived from a solid tumor of epithelial origin;

(b) the solid tumor stem cells are tumorigenic;

(c) the solid tumor stem cell population is enriched at least 2-fold relative to unfractioned tumor cells; ~~and~~

(d) the solid tumor stem cell expresses CD44; ~~at least one marker selected from the group consisting of B38.1, CD44 and epithelial specific antigen (ESA).~~

(e) the solid tumor stem cell does not express detectable levels of one or more LINEAGE markers, wherein a LINEAGE marker is selected from the group consisting of CD2, CD3, CD10, CD14, CD16, CD31, CD45, CD64, and CD140b; and

(f) the solid tumor stem cell expresses lower levels of the marker CD24 than the mean expression of CD24 by non-tumorigenic cancer cells derived from the solid tumor.

24. (original) The enriched population of claim 23, wherein the solid tumor is a sarcoma or an epithelial cancer.

25. (canceled)

26. (canceled)

27. (original) The enriched population of claim 23, wherein the enrichment is in the ability to form new tumors relative to unfractionated tumor cells.

28. (original) The enriched population of claim 23, wherein the population is at least 5-fold enriched.

29. (original) The enriched population of claim 23, wherein the population is at least 10-fold enriched.

30. (original) The enriched population of claim 23, wherein the population is at least 50-fold enriched.

31. (canceled)

32. (currently amended) A method for enriching a population of cells for solid tumor stem cells, comprising the steps of:

(a) dissociating a solid tumor of epithelial origin to form a cell suspension;

(b) contacting the dissociated cells with a first reagent that selectively binds solid tumor stem cell positive marker CD44, a second reagent that binds one or more LINEAGE markers, wherein a LINEAGE marker is selected from the group consisting of CD2, CD3, CD10, CD14, CD16, CD31, CD45, CD64, and CD140b, and a third reagent that binds the CD24 marker;~~at least one reagent, wherein the reagent selectively binds to a solid tumor stem cell positive marker, wherein the solid tumor stem cell positive marker~~

~~is a marker selected from the group consisting of CD44, B38.1 and ESA or to a solid tumor stem cell negative marker, wherein the solid tumor stem cell negative marker is a marker selected from the group consisting of CD2, CD3, CD10, CD14, CD16, CD31, CD64 and CD140b~~; and

(c) selecting cells that bind to the first reagent and that do not bind or bind poorly to the second and third reagents ~~reagent that binds to a positive marker and/or that do not bind to the reagent that binds to a negative marker,~~ wherein the selected cells are enriched in tumor cells as compared with the unfractionated population of solid tumor cells.

33. (original) The method of claim 32, wherein the solid tumor is a sarcoma or epithelial cancer.

34. (original) The method of claim 32, wherein the reagent is an antibody or a lectin.

35. (original) The method of claim 32, wherein the reagent is conjugated to a fluorochrome or to magnetic particles.

36.-37. (canceled)

38. (original) The method of claim 32, wherein the cell selection is performed by flow cytometry, fluorescence activated cell sorting, panning, affinity column separation, and/or magnetic selection.

39. (canceled)

40. (previously presented) The method of claim 32, further comprising the step of: (d) isolating the selected solid tumor stem cell.

41.-184. (canceled)

185. (canceled)

186. (canceled)

187. (previously presented) The isolated solid tumor stem cell of claim 4, wherein the LINEAGE markers further comprise CD10, CD31, and CD140b.

188. (previously presented) The method of claim 33, wherein the epithelial cancer is a breast cancer or an ovarian cancer.

189.-193. (canceled)

194. (previously presented) The enriched population of claim 24, wherein the epithelial cancer is a breast cancer or an ovarian cancer.

195. (canceled)

196. (canceled)

197. (canceled)

198. (previously presented) The enriched population of claim 194, wherein the epithelial cancer is a breast cancer or an ovarian cancer.

199. (new) A solid tumor stem cell isolated by the method of claim 40.

200. (new) The solid tumor stem cell of claim1, wherein said solid tumor stem cell further expresses B38.1 marker.

201. (new) The solid tumor stem cell of claim 1, wherein said solid tumor stem cell further expresses epithelial specific antigen (ESA).

202. (new) The enriched population of claim 22, wherein said solid tumor stem cell further expresses B38.1 marker.

203. (new) The enriched population of claim 22, wherein said solid tumor stem cell further expresses epithelial specific antigen (ESA).

204. (new) The method of claim 32, wherein said selected cells are further enriched for cells expressing B38.1 marker.

205. (new) The method of claim 32, wherein said selected cells are further enriched for cells expressing epithelial specific antigen (ESA).